AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A computer-implemented system that facilitates determining presence of ~~an object~~ a Universal Plug and Play (UPnP) device in a computing network, comprising:

a transmit component that transmits a multicast-type M-SEARCH verb that is sent ~~message~~ as a unicast message to ~~the object~~ a specific UPnP device within the network such that the M-SEARCH request is made to function as an Internet Control Message Protocol (ICMP) ping operation, the ~~object~~ UPnP device having a timeout period and a plurality of functions capable of independent presence indication associated therewith, the multicast-type M-SEARCH verb being ~~message~~ directed to a first set of one or more of the plurality of functions, the multicast-type ~~message is~~ M-SEARCH verb being of a type that is normally sent as a multicast datagram to discover multiple UPnP devices;

a presence component that monitors a response to the unicast message from the ~~object~~ UPnP device, the response comprising a directed search response even though the UPnP device is configured to treat the M-SEARCH verb as if it was a broadcast M-SEARCH request broadcast to all UPnP devices in the network, and if a response is not received, the ~~object~~ UPnP device is presumed to be off-line with respect to the first set of one or more of the plurality of functions, wherein the ~~object~~ UPnP device is presumed to be on-line with respect to a second set of one or more of the plurality of functions, and wherein the response is similar to that for a multicast message to the ~~object~~ UPnP device;

and a processor configured to execute the transmit and presence components.

2. (Currently Amended) The system of claim 1, the ~~object~~ UPnP device is at least one of a wired device, a wireless device, and a service.

3. (Currently Amended) The system of claim 1, the multicast-type ~~message~~ M-SEARCH verb is transmitted in unicast at least once before the timeout period expires.

4. (Currently Amended) The system of claim 1, a plurality of the multicast-type ~~messages~~ M-SEARCH verbs are transmitted in unicast to the ~~object~~ UPnP device to control the ~~object~~ UPnP device.

5. (Currently Amended) The system of claim 4, the plurality of multicast-type ~~messages~~ M-SEARCH verbs signal the ~~object~~ UPnP device to stay online.

6. (Currently Amended) The system of claim 1, at least one of the transmit component and the presence component is part of a client application that transmits the multicast-type ~~message~~ M-SEARCH verb in unicast and receives the response in unicast from the ~~object~~ UPnP device.

7. (Cancelled)

8. (Original) The system of claim 1, the unicast response is cached at the system-end.

9. (Currently Amended) The system of claim 1, the multicast-type ~~message~~ M-SEARCH verb is directed to at least one of the ~~object~~ UPnP devices, an embedded device of the ~~object~~ UPnP device, and an embedded service of the ~~object~~ UPnP device.

10. (Cancelled)

11. (Currently Amended) The system of claim 1, the ~~object~~ UPnP device is compatible with a plug-and-play architecture.

12. (Currently Amended) The system of claim 1, the transmit component transmits a plurality of unique multicast-type ~~messages~~ M-SEARCH verbs in unicast to a respective plurality of the ~~objects~~ UPnP devices.

13. (Currently Amended) The system of claim 1, the transmit component transmits a first multicast-type ~~message~~ M-SEARCH verb in unicast to an intermediate device to determine its status before transmitting the multicast-type ~~message~~ M-SEARCH verb in unicast to the ~~object~~ UPnP device.

14. (Currently Amended) The system of claim 1, the multicast-type ~~message~~ M-SEARCH verb is transmitted in unicast to the ~~object~~ UPnP device from a first client application, the response to which indicates a status of the ~~object~~ UPnP device, and the status of which is announced by the first client application to a second client application.

15. (Cancelled)

16. (Original) A computer readable medium having stored thereon computer executable instructions for carrying out the system of claim 1.

17-25. (Cancelled)

26. (Currently Amended) A computer-implemented method of determining the presence of a[[n]] ~~object~~ UPnP device on a network, comprising:

transmitting from a computer a multicast-type M-SEARCH verb that is sent ~~message~~ in unicast to ~~the object on demand~~ a specific UPnP device within the network such that the M-SEARCH request is made to function as an Internet Control Message Protocol (ICMP) ping operation, the ~~object~~ UPnP device having a timeout period and a plurality of functions capable of independent presence indication associated therewith, the multicast-type M-SEARCH verb being directed to a first set of one or more of the plurality of functions, the multicast-type M-SEARCH verb being of a type that is normally sent as a multicast datagram to discover multiple UPnP devices;

checking for receipt by the computer of a response from the ~~object~~ UPnP device to determine the status of the ~~object~~ UPnP device, the response comprising a directed search response even though the UPnP device is configured to treat the M-SEARCH verb as if it was a broadcast M-SEARCH request broadcast to all UPnP devices in the network, and if a response is not received, the UPnP device is presumed to be off-line with respect to the first set of one or more of the plurality of functions, wherein the UPnP device is presumed to be on-line with respect to a second set of one or more of the plurality of functions, and wherein the response is similar to that for a multicast message to the UPnP device; and

determining the status of the ~~object~~ UPnP device based upon receipt or non-receipt of the response.

27. (Currently Amended) The method of claim 26, further comprising delaying determination of the status of the ~~object~~ UPnP device until a predetermined number of additional multicast-type ~~messages~~ M-SEARCH verbs have been transmitted to the ~~object~~ UPnP device in unicast.

28. (Currently Amended) The method of claim 26, further comprising initiating discovery of an intermediary ~~object~~ UPnP device in response to determining initially that the ~~object~~ UPnP device is off-line.

29. (Currently Amended) The method of claim 26, further comprising automatically initiating discovery of a redundant ~~object~~ UPnP device in response to determining that the ~~object~~ UPnP device is off-line.

30. (Currently Amended) The method of claim 26, the ~~object~~ UPnP device is one of a plurality of interdependent ~~objects~~ UPnP devices such that failure of the ~~object~~ UPnP device results in failure of the remaining plurality of interdependent ~~objects~~ UPnP devices.

31. (Currently Amended) The method of claim 30, plurality of interdependent ~~objects~~ UPnP devices are discovered according to a hierarchy such that the ~~object~~ UPnP device is discovered before the remaining plurality of interdependent ~~objects~~ UPnP devices.

32. (Currently Amended) The method of claim 26, further comprising signaling the ~~object~~ UPnP device to stay on-line using at least two of the multicast-type ~~messages~~ M-SEARCH verbs sent in unicast to the ~~object~~ UPnP device.

33-36. (Cancelled)